ROSS ENVIRONMENTAL ASSOCIATES, INC.

Hydrogeology, Water Quality, GIS Planning, Remediation,
Contaminant Fate & Transport, Regulatory Compliance and
Permitting, Environmental Site Assessments, and Radon Mitigation

10 October 2013

Mr. Walter Elander
Jay Peak Resort
830 Jay Peak Road
Jay, Vermont 05859
welander@jaypeakresort.com

RE: UST Closure – Jay Peak Ski Resort, Stateside Garage (Facility # 2622)
217 Stateside Road – Jay, Vermont

Dear Mr. Elander:

On 27 September 2013, Ross Environmental Associates, Inc (***R.E.A.***) provided oversight for the removal of one 1,000-gallon fuel oil underground storage tank (UST) at Jay Peak Resort property located at 217 State Side Road in Jay, Vermont (**Figure 1 &2**). Excavation, cutting and cleaning the tank was provided by FPH Tank Installation and Service of Orleans, Vermont. The UST assessment was completed in accordance with Vermont Department of Environmental Conservation (VT DEC) guidelines. The findings of the UST removal are outlined below. A copy of the UST Permanent Closure Form and photographs of the removal activities are attached.

Findings

The findings of this assessment are summarized as follows:

- The 1,000-gallon UST is believed to have been installed approximately 50 years ago. The tank was found to be in poor condition upon removal with rust, pitting, and several holes observed on endwall and sidewalls.
- Approximately 800 gallons of waste fuel, water and tank bottom sludge were removed from the tank prior to removal and placed into a polyethylene (PE) holding container for subsequent proper disposal by Jay Peak Ski Resort.
- Soils in the excavation consisted of brown sand with gravel from ground surface to the bottom of excavation at approximately 6.5 feet below ground surface (bgs).
- Photo-ionization detector (PID) readings on soils from the excavation ranged from 0.0 to 220 parts per million-volume (ppmv), which are above the VT DEC action level of 10 ppmv for fuel oil/diesel contaminated soils. The highest PID readings came from the soil around the bottom and lower half of the tank, in proximity to several holes observed in the tank.
- PID readings inside the garage ranged from 0.0 to 2.0 parts-per-million (ppm), but are likely due to truck cleaning and maintenance products.
- Groundwater was encountered during the excavation at approximately 6.5 feet bgs, and was in direct contact with petroleum contaminated soils (PCS).
- Based on site history and after consultation with Sue Thayer of the VT DEC UST Division, all soils removed during the UST closure were backfilled.

Recommendations

Based on visual inspection of the UST and observations of subsurface conditions during the UST closure assessment, the former UST system appears to have released heating fuel into the subsurface environment. The cause of the release is likely due to the poor tank conditions and holes observed in the bottom and lower half of the tank. At the time the degree and extent of contamination has not been determined. Based on the findings of this assessment ***R.E.A*** recommends the following:

- The VT DEC should be notified of the petroleum contamination identified during the UST closure.
- An initial site investigation (ISI) should be completed in order to determine the degree and extent of petroleum contamination at the Site, which should include: sampling and analysis of the on-site drinking water supply, installation of soil borings with the possible installation of monitoring wells, appropriate sampling, and an evaluation of possible impacts to nearby sensitive receptors. The need for additional work should be based of the findings of the ISI.

Site Information

The Jay Peak Resort is located adjacent to VT Route 242 in a rural area of Jay, Vermont. The site encompasses 500+ acres and is occupied by a ski resort with attending base lodge, condominiums, equipment sheds and hotels, as well as an enclosed ice rink, water park, and golf course with club house. The subject property is bound to the north, east, south and west by undeveloped forested land. However, VT Route 242 and private residences are located southeast of the Jay Peak Resort property.

The Stateside Maintenance Garage is located at 217 Stateside Road at the resort in Jay, Vermont (**Figures 1 & 2**). The 1,000-gallon UST contained fuel oil for heating purposes. The UST was located approximately two feet northeast of the building. The stick built building is constructed on a stacked cinderblock foundation.

The subject property is served by three community water systems (Jay Peak Basin Complex WSID #5565, Jay Peak Subdivision II WSID #5201 and Jay Peak Village Phase I WSID #20464) and one non-transient non-community (NTNC) water system (Jay Peak Mountainside Condos WSID #20424). The water systems are compromised of multiple bedrock supply wells located throughout the large property. Wastewater disposal for the Resort is handled by a three VT DEC approved onsite wastewater treatment plants, with numerous project ID numbers [WW-7-0259-(12A, 13A, 15, 16, 17, 17A, 18, 19, 20, 21, 22)].

The nearest surface water body to the former UST system is the Jay Branch tributary of the Missisquoi River, which is located approximately 200 feet to the southeast. The approximate locations of nearby sensitive receptors are shown on **Figure 2**.

UST Observations

The 1,000-gallon, single-walled steel UST was likely installed approximately 50 years ago, according to Jay Peak Maintenance personnel. Approximately 800 gallons of waste fuel, water and tank bottom sludge were removed from the UST prior to removal, and placed into a PE holding container for subsequent proper disposal by Jay Peak Resort. The tank was found to be in poor condition upon removal with rust, pitting, and several observable holes. The tank was cut and cleaned by FPH Tank Installation and Services of Orleans, Vermont. The tank will be disposed of as scrap metal at All Metals Recycling of Hardwick, Vermont.

Environmental Observations

Soils in the excavation consisted of brown sands with gravel from ground surface to the bottom of excavation at approximately 6.5 feet bgs. Groundwater was observed at approximately 6.5 feet bgs. PID readings on the soils from the UST excavation ranged from 0.0 to 220 ppmv, which is above the VT DEC action level of 10 ppmv for fuel oil/diesel contaminated soils. A drainage pipe was discovered in the

excavation that has an unknown use and is believe to be buried trash. Approximately ten cubic yards of petroleum contaminated soils were removed from the excavation and then backfilled after consultation with Ms. Sue Thayer of the VT DEC UST Division. The vertical and horizontal extent of contamination could not be defined at the time of the UST removal because groundwater was encountered as well as the space restrictions and limitations of the excavator. A summary of the PID readings and approximate soil sample locations are shown on **Table 1** and **Figure 3**, respectively.

Soils in the vicinity of the UST were screened for the possible presence of volatile organic compounds (VOCs) with an Ion Science Phocheck Plus photo-ionization detector (PID). The PID was calibrated on the day of the UST closure assessment with isobutylene gas to a benzene reference. Soil samples were placed in resealable bags, which were then sealed and agitated. Headspace in the bag was then screened for the possible presence of VOCs with the PID.

Receptor Evaluation

The following potential receptors were identified during the UST closure assessment:

- Soils and groundwater in the vicinity of the former UST.
- Indoor air of the on-site building located approximately two feet south of the former UST system.
- The nearby Jay Branch Brook which is a tributary of the Missisquoi River, located approximately 300 feet southeast of the former UST system.
- Drinking water for nearby residences located within one-half mile of the former UST system.

No elevated PID readings were detected in the nearby maintenance garage and no sheening was observed on the Jay Branch Brook. Drinking water supplies are unlikely to be affected by the release, based on distance from the site and the already monitored public drinking water systems. At this time, the extent of the subsurface contamination is unknown; further evaluation and an assessment of possible impacts to nearby sensitive receptors should be completed during the Initial Site Investigation.

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Please call me if you have any questions or concerns regarding this work.

Sincerely,

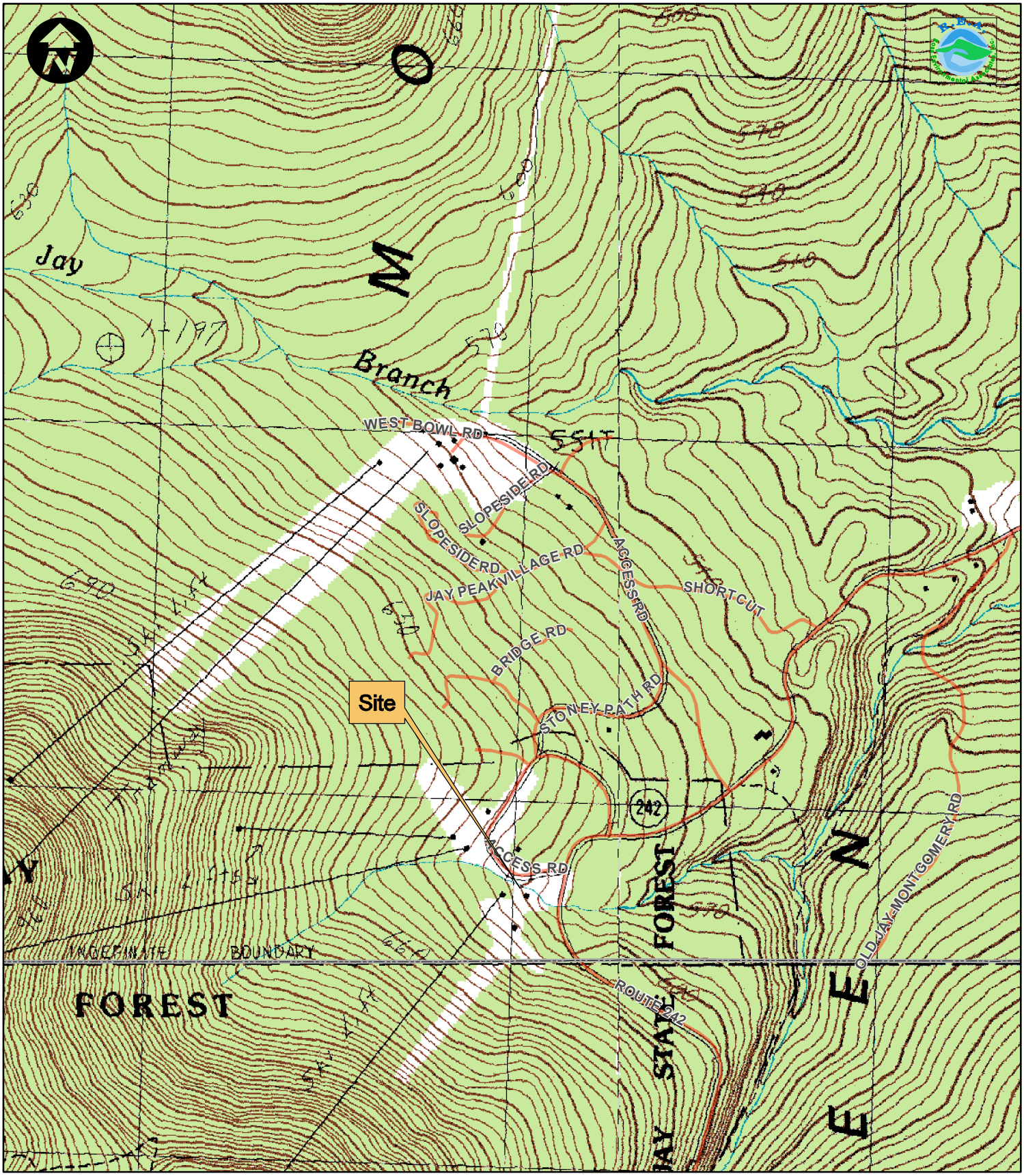
Ross Environmental Associates, Inc.

Michael Pinard
Environmental Scientist

CC: Ms. Sue Thayer – VT DEC UST Division Susan.Thayer@state.vt.us
Mr. Scott Oeschger – FPH Tank Installation & Service
Mr. Robert Moore – Jay Peak Resort rmoore@jaypeakresort.com

Attachments

Mp//ref: 33162JayPeakUST.doc



Site Coordinates: 44º 55’ 40.97” N 72º 30’13.40” W

USGS: Jay Peak & North Troy, Vermont Quadrangle, 1:24,000, 1986

Figure 1
USGS Map
Jay Peak Resort
217 Stateside Road
Jay, Vermont

33162Figure1.pdf

Site Coordinates: 44º 55' 40.97" N 72º 30'13.40" W

Aerial Photo: 2009 NAIP

Legend

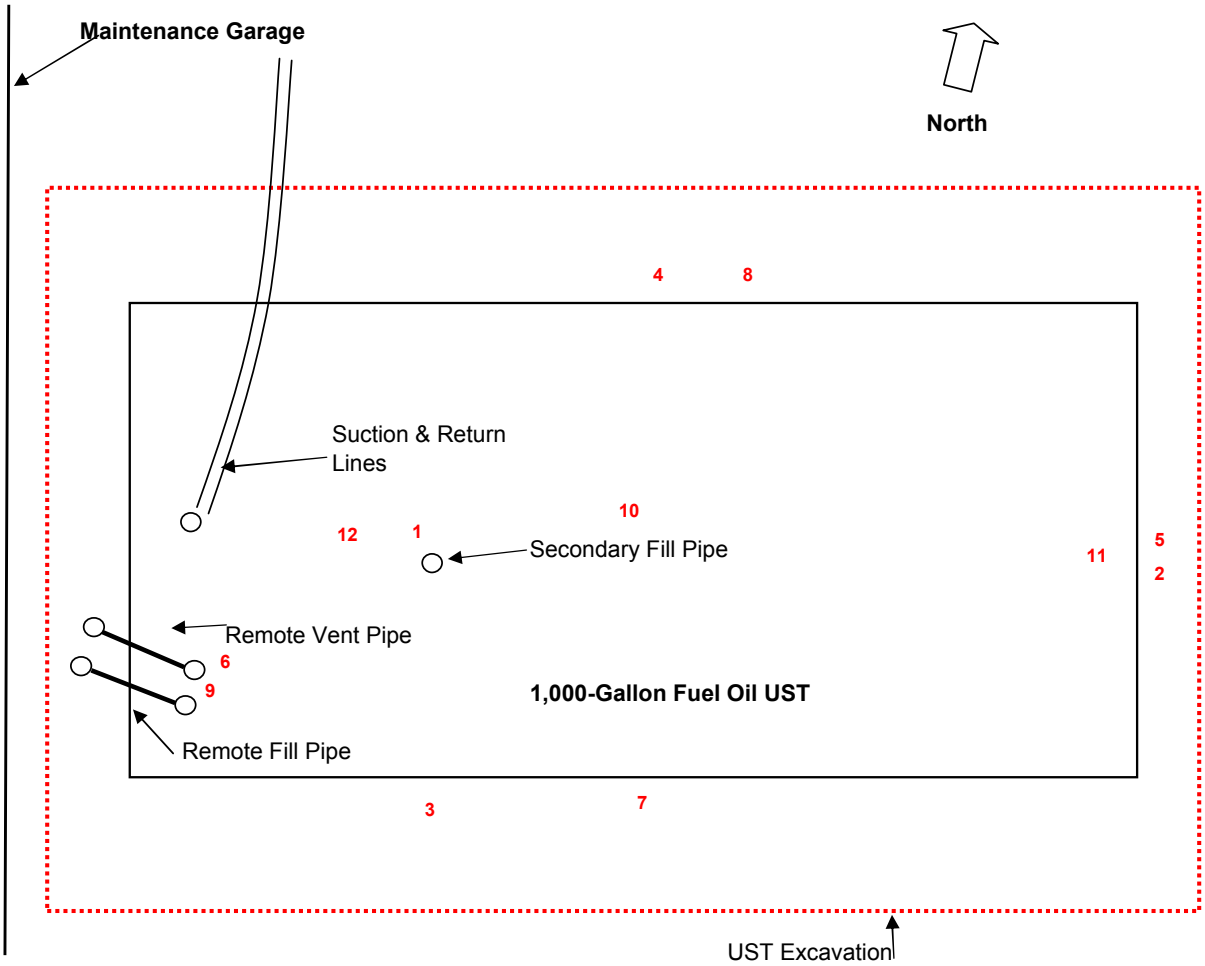
- 2012 VT Private Supply Wells
- 2012 VT Public Supply Wells
- NA
- Zone 1
- Zone 2
- Zone 3
- <all other values>
- Surface Water Line
- Surface Water Poly

Figure 1
USGS Map
Jay Peak Resort
217 Stateside Road
Jay, Vermont

33162Figure2.pdf

FIGURE 3

Summary of PID Readings
Jay Peak Resort - Stateside Maintenance Garage
Jay, Vermont
Monitoring Date: 27 September 2013



All locations are approximate.

TABLE 1

Summary of PID Readings
Jay Peak Resort - Stateside Maintenance Garage
Jay, Vermont
Monitoring Date: 27 September 2013

Sample ID	Depth (Feet,bg)	PID Reading (ppmv)	Location/comments
S-1	1.0	0.0	Soils From Secondary Fill Pipe at Top of Tank
S-2	2.0	0.0	Soils From Northeast Top of Tank
S-3	3.0	6.2	Soils From South Side Top of Tank
S-4	3.0	0.0	Soils From North Side Top of Tank
S-5	5.0	**143**	Soils From Northeast Side Excavation Bottom
S-6	1.0	0.0	Soils From Vent and Fill Pipe Top of Tank
S-7	5.0	**147**	Soils From South Side Excavation Bottom
S-8	5.0	**220**	Soils From North Side Excavation Bottom
S-9	5.0	4.6	Soils From Southwest Excavation Bottom
S-10	7.0	**160**	Soils From Middle of Excavation Bottom
S-11	6.0	**128**	Soils From Northeast Excavation Bottom
S-12	6.5	**195**	Soils From West Side Excavation Bottom
AVERAGE		**83.7**	

PID = photoionization detector, IonScience PhoCheck Plus
ppm = parts per million, bg = below grade

Photograph 1. Overview of Site and UST Location - View toward North.

Photograph 2. View of UST location, prior to removal - View toward Southwest.

Photograph 3. View of top of tank at exposure - View toward West.

Photograph 4. View of UST after cutting and cleaning - View toward West.

Photograph 5. View of one of several holes in tank - View of Endwall.

Photograph 6. View of excavation bottom after tank removal, note groundwater - View toward South.

Underground Storage Tank and Piping Closure Form

Vermont Agency of Natural Resources, Department of Environmental Conservation
Waste Management and Prevention Division
http://www.anr.state.vt.us/dec/wastediv/index.htm

Important: All closures must be scheduled with the Underground Storage Tank Program at least 5 business days prior to the commencement of closure. Please call 802-828-1138

Section A. Facility/Ownership Information

Facility ID #: 2622 **SMS #** (if applicable) **:** _____

To find if a facility has an ID # and/or SMS# please use WMID: http://www.anr.state.vt.us/wmid/. If there is no Facility ID then please contact the UST Program 802-828-1138.

Facility Name: Jay Peak Resort - Maintenance Garage # of employee's _____

Street Address: 217 Stateside Road City/Town: Jay

Type of Facility: X Commercial/industrial; ____ Retail ____Residential; ____ Service Station; ____ Institutional; ____Farm; ____ Federal; ____ Bulk; ____ Fish Hatchery

Owner of UST(s) to be closed: Jay Peak Resort Owner Telephone: _____

Owner mailing address: 830 Jay Peak Road Jay, VT

Owner Email: welander@jaypeakresort.com

Contact (if different from owner): Mr. Walter Elander Contact Telephone: 802-988-2611

Contact Email: welander@jaypeakresort.com

Landowner (if different than tank owner): _____

Section B. Closure Information

What components will be closed/removed? UST system X; Tanks only_____; Piping only ____ .

Reason for closure/removal? Liability: X; Replacement: _____; Abandoned: _____; Suspected leak: _____.

UST #	Product	Tank Age	Size (gal)	Tank condition (excellent, good, fair, poor)	Piping Age	Piping condition (excellent, good, fair, poor)	Proximity (ft.) of tanks to buildings / structures
1	#2 fuel oil	1967	1,000	poor	1967	poor	2.0

Have any tanks been closed in-place? UST #_____ Authorized by: _____ Date: _____

Type of material used to closed tank in place *(Water is not allowed)*: _____

Disposal/destruction of removed UST(s) Location: All Metals Recycling Method: scrap Date: 9/28/2013

Amount (gal) and type of waste generated from USTs: 800 gallons

(Tank contents are hazardous wastes and must be handled as such unless recovered as usable product; sludge and solids are not usable/recyclable products and must be handled as hazardous waste. Please contact the Hazardous Waste program with any questions 802-828-1138).

Tank cleaning company (must be trained in confined space entry): FPH Tank Installation & Service

 Facility ID # 2622

Certified hazardous waste hauler: _____

Generator ID #: _____

Section C. Initial Site Characterization *(Work in this section must be completed by a professional environmental consultant or hydro geologist with experience in environmental sampling for the presence of hazardous materials. A full report from the consultant must accompany this form.*

Excavation Information. Some removals require more than one excavation. Identify as A, B, C, etc.

Tank #, excavation A,B,C	Depth (ft.)	Excavation size (sq. ft.)	Peak PID reading	Depth of Peak (ft.)	Avg. PID reading	Bedrock depth (ft.)	Groundwater?(Y/N) and depth	Soil type
1	6.5	100	220	5.0	83.7	unknown	Y, 6.5' bgs	brown sand & gravel

Locate all readings and samples on a site diagram and submit with this form and site assessment

Dig Safe # _____

PID Make: IonScience Model: PhoCheck+ Calibration (date/time/gas) 9/27/2013-8:30-Isobutylene

Have any soils been polyencapsulated on site? X NO; ____YES # cubic yds: _____

PID range > zero: _____ppm to_____ppm

Have any soils been transported off site? X NO; _____YES # cubic yds: _____

Location transported to: _____ Approved by: _____

Amount of soil backfilled (cubic yds.): _____ PID range > zero: _____ppm to_____ppm

Have limits of contamination been defined? X NO; ____YES. Other on-site contamination? ____NO; ____YES

Is contamination in contact with building foundation? X No; _____Yes, If Yes, PID reading; _____ppm

Number of soil samples collected for laboratory analysis: _____ Results due date: _____

Free Phase product encountered? X NO; _____YES Thickness: _____ Sheen: _____

Groundwater encountered? _____NO; X YES Depth: 6.5'

Are there existing monitoring wells on-site? X NO; _____YES How many? _____ (Locate on site diagram)

Have new monitoring wells been installed? X NO; _____YES (Locate on site diagram)

Samples obtained from monitoring wells for lab analysis? _____NO; _____YES Results due date: _____

Is there a water supply well on site? ____NO; X YES Type: ____Shallow; X Rock; _____Spring

Number of public water supply wells located within 0.5-mile radius: 12 Min. distance (ft); 500

Receptors impacted:

X Soil; _____Indoor Air; ____ Ambient Air; X Groundwater; ____Surface Water; ____Water Supply

 Facility ID 2622

Any release must be reported immediately by calling 802-828-1138 (if after hours please call 800-641-5005)

Name of WMPD staff that the release was reported to: Ms. Sue Thayer Date: 9/27/2013

Spill # (issued by WMPD staff when release is reported):_____

Section D: Tanks and Piping Remaining or to be Installed. Regardless of size or use, list all USTs and ASTs currently at facility or to be installed at facility. For "Tank Status," indicate "abandoned," "in use," or "to be installed*." This includes any UST/ASTs used to store fuel for heat at a public building (*propane tanks do not need to be listed)*

Tank #	UST or AST?	Product	Size (gallons)	Tank Use (heat, backup generator, etc)	Tank age	Tank Status	Piping age	Piping Status

***Note: Some installations may require permits and advance notice to the UST Program. Please call the UST Program with any questions 802-828-1138**

Section E. Statements of UST closure compliance

I, Mike Pinard, as the environmental consultant on-site, I hereby
(Please print name)

certify that the site assessment requirements were performed in accordance with DEC policy and regulations, and that information which I have provided on this form is true and correct to the best of my knowledge.

Signature: James Lescarbeau for Mike Pinard

Company: Ross Environmental Assoc., Inc. Telephone#: 802-253-4280

Date of Assessment: 9/27/2013 Date of Closure: 9/27/2013

Return this form along with complete narrative report and photographs to the Department of Environmental Conservation (DEC), Underground Storage Tank Program within **10 days of closure**. Do not delay submission of the site assessment if waiting for lab analysis results. Labs can be emailed separately.

An electronic version of the report from an environmental consultant covering all aspects of closure and site assessment, complete with photographs and any other relevant data, must accompany this form and be emailed to WMPD or uploaded on the WMPD FTP server. Please DO NOT SUBMIT PAPER COPIES.

All procedures must be conducted by qualified personnel, to include training required by 29 CFR 1910.120. Documentation of all methods and materials used must be adequate. All work must be performed in compliance with DEC policy "UST Closure and Site Assessment Requirements" as well as all applicable statutes, regulations, and additional policies. The DEC may reject inadequate closure forms and reports.